



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,992	09/19/2003	Yi-Shung Chaug	SIPXP101	5386

46006 7590 08/23/2005

HOWREY LLP
C/O IP DOCKETING DEPARTMENT
2941 FAIRVIEW PARK DRIVE, SUITE 200 & 300
FALLS CHURCH, VA 22042-2924

EXAMINER

CHAN, SING P

ART UNIT	PAPER NUMBER
----------	--------------

1734

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/665,992

Applicant(s)

CHAUG ET AL.

Examiner

Sing P. Chan

Art Unit

1734

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-68 is/are pending in the application.
- 4a) Of the above claim(s) 5, 12, 13, 15-17, 19-32, 45, 49, 52-57, 59, 61, 62 and 64-68 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-11, 14, 18, 33-44, 46-48, 50, 51, 58, 60 and 63 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/14/03, 1/23/04 & 2/24/04
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of species election in the reply filed on June 2, 2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

2. Claims 5, 12, 13, 15-17, 19-32, 45, 49, 52-57, 59, 61, 62, 64-68 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on June 2, 2005.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Art Unit: 1734

4. Claims 1-4, 6-11, 14, 18, 33-35, 42-44, 46-48, 50, and 51 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-4, 6-11, 14, 18, 32, 34, 35, 50-56, 58, and 60 of copending Application No. 10/666,912. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the copending application recited the same limitation as the instant application. However, the claims of the copending application do not recite "the substrate and the patterned thin film design formed thereon are suitable for use as an in-mold decoration (IMD) decorated film." But, the recitation of "the substrate and the patterned thin film design formed thereon are suitable for use as an in-mold decoration (IMD) decorated film" is intended used and only required that the substrate as form by the copending application be capable of being used as an in-mold decoration film, which the substrate as recited by the claims of the copending application is capable of being used as an in-mold decoration film.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

5. Claims 58, 60, and 63 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 44 and 46 of copending Application No. 10/422,557. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the copending application recite the same limitation as the instant application except for "the substrate and the patterned thin film design formed thereon are suitable for use as an in-mold decoration (IMD) decorated film." But, the recitation of "the substrate and the

Art Unit: 1734

patterned thin film design formed thereon are suitable for use as an in-mold decoration (IMD) decorated film" is intended used and only required that the substrate as form by the copending application be capable of being used as an in-mold decoration film, which the substrate as recited by the claims of the copending application is capable of being used as an in-mold decoration film.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-4, 6, 7, 9-11, 14, 18, 33, and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Aufderheide (U.S. 4,714,631).

Regarding claims 1, 2, 10, 11, and 14, Aufderheide discloses a method of forming patterned layers onto substrates. The method includes printing a pattern of strippable undercoating, with the undercoating comprising 5 to 80% by weight solid particulate material (Col 15, lines 1-3), onto a substrate (Col 4, lines 15-20 and Col 4, lines 37-40), depositing a metal layer onto the coated substrate (Col 4, lines 47-60), washing the coating and the metal layer adhering to the coating off with water (Col 4, lines 61-66) and forming a conductive pattern on the substrate (Col 5, lines 6-11). The

Art Unit: 1734

substrate with the conductive pattern is capable of being used as an in-mold decoration decorated film, which satisfies the requirement of intended use as recited by the claim.

Regarding claims 3, 4, and 6, Aufderheide discloses the strippable undercoating comprising water-soluble film forming polymer (Col 6, lines 8-12), i.e. binder, such as polyvinyl alcohol, poly (acrylic acid), and polyvinyl pyrrolidone (Col 6, lines 40-44).

Regarding claim 7, Aufderheide discloses solid particulates include silica, carbon black, aluminum powder, TiO_2 , and glass beads. (Col 7, lines 22-24)

Regarding claim 9, Aufderheide discloses the undercoating includes plasticizers. (Col 7, lines 29-32)

Regarding claim 18, Aufderheide discloses the metal layer is deposited by sputtering. (Col 7, lines 45-48)

Regarding claim 33, Aufderheide discloses the substrate includes any material including plastic films. (Col 15, lines 22-29)

Regarding claim 40, Aufderheide discloses the substrate includes polycarbonate. (Col 15, lines 26-29)

8. Claims 58, 60, and 63 are rejected under 35 U.S.C. 102(b) as being anticipated by Hinsley (GB 2,207,289).

Hinsley discloses a method of forming a metal pattern on a substrate. The method includes applying an image to the substrate by depositing dry toner with a photo-copying machine to the substrate (Page 4, lines 7-13), coating the whole surface of the substrate with a film of metal or metal alloy, and selectively removing metal corresponding to the image, if the image was negative, removing the metal layer from

Art Unit: 1734

the substrate with the image formed thereon or if the image was positive, removing the metal layer from the substrate without the image formed thereon or directly on the substrate (Page 4, lines 14-27) by immersing the coated substrate in a bath of solvent (Page 7, lines 7-17). The substrate as recited by Hinsley is capable being used as an in-mold decoration decorated film, which satisfies the requirement of intended use as recited by the claim.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aufderheide (U.S. 4,714,631) as applied to claim 1 above, and further in view of Voss et al (U.S. 6,426,143).

Aufderheide disclosed using solid particulate material such as carbon black, silica and TiO₂, but is silent as to the filler for the undercoating includes polymeric or polymeric composite particle. However, providing polymeric particle as filler is well known and conventional as shown for example by Voss et al. Voss et al discloses a method of forming protected printed conductor. The method includes providing a primer for the metal coating, wherein the primer includes organic and/or inorganic filler such as

Art Unit: 1734

pulverized high melting point plastics, silica, carbon blacks, and TiO_2 , which are all equivalents. (Col 5, lines 27-32)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide any filler for the polymer coating such as pulverized high melting point plastics, silica, carbon blacks, and TiO_2 as disclosed by Voss et al in the method of Aufderheide to provide any filler for the coating, which are all equivalents.

11. Claims 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aufderheide (U.S. 4,714,631) as applied to claim 33 above, and further in view of Todd et al (U.S. 5,368,902).

Aufderheide as disclosed above is silent as to the forming process is a roll-to-roll process. However, forming patterned thin film using a roll-to-roll process is well known and conventional as shown for example by Todd et al. Todd et al discloses a method of forming patterned thin film. The method includes providing substrate in roll and unwinding and rewinding the rolled substrate to forming the patterned thin film. (Col 3, lines 24-36)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the substrate on a roll and forming the thin film by a roll-to-roll process as disclosed by Todd et al in the method of Aufderheide to provide an patterned thin film economically. (See Todd et al, Col 1, lines 33-35)

12. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aufderheide (U.S. 4,714,631) as applied to claim 1 above, and further in view of Nakagiri et al (U.S. 4,078,935).

Aufderheide disclosed the substrate includes plastic films such as polyester, polycarbonates, acrylates and polyimides, but is silent as to the substrate is polyethylene terephthalate (PET) film. However, providing PET as the substrate is well known and conventional as shown for example by Nakagiri et al. Nakagiri discloses a support member, i.e. a substrate for conductive metal. Support member includes material such as polyester such as polyethylene terephthalate (PET), polyolefins such as polyethylene, and polycarbonate. (Col 7, lines 3-13)

It would have been obvious to one ordinary skill in the art at the time the invention was made to provide the substrate comprising PET as disclosed by Nakagiri in the method of Aufderheide, which are all equivalents.

13. Claims 37-39 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aufderheide (U.S. 4,714,631) in view of Nakagiri et al (U.S. 4,078,935) as applied to claim 36 above, and further in view of Nakamura et al (U.S. 5,795,527).

Regarding claims 37 and 41, Aufderheide as modified above is silent as to the substrate includes a release agent and a durable layer. However, providing a substrate with a release agent and a durable layer is well known and conventional as shown for example by Nakamura et al. Nakamura et al discloses a method of forming a decorated article. The method includes providing a base film, a release layer, i.e. a release agent, a hard coat layer, i.e. durable layer. (Col 4, lines 11-16)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a substrate with a base film, a release agent, and a hard coat layer as disclosed by Nakamura et al in the method of Aufderheide as modified by

Art Unit: 1734

Nakagiri et al to provide the coating with abrasion resistance (Col 4, lines 50-59) and inherent oil resistant.

Regarding claim 38, Aufderheide discloses the substrate is printed with printing ink. (Col 5, line 67 to Col 6, line 5)

Regarding claim 39, Aufderheide as modified above is silent as to the decorative film includes an adhesive layer. However, providing an adhesive layer on a decorative film is well known and conventional as shown for example by Nakamura et al.

Nakamura et al discloses an adhesive layer integrally formed on the surface of the in-mold transfer. (Col 4, lines 12-16)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide an adhesive layer on the substrate as disclosed by Nakamura et al in the method of Aufderheide as modified by Nakagiri et al to provide means for bonding the metallic reinforcing layer to a to-be-decorated object molded form resin. (See Nakamura et al, Col 2, lines 31-33)

14. Claims 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aufderheide (U.S. 4,714,631) in view of MacDiarmid et al (U.S. 2002/0083858).

Regarding claim 42, Aufderheide discloses a method of forming patterned layers onto substrates. The method includes printing a pattern of strippable undercoating, with the undercoating comprising 5 to 80% by weight solid particulate material, onto a substrate (Col 4, lines 15-20 and Col 4, lines 37-40), depositing a metal layer onto the coated substrate (Col 4, lines 47-60), washing the coating and the metal layer adhering

Art Unit: 1734

to the coating off with water (Col 4, lines 61-66) and forming a conductive pattern on the substrate (Col 5, lines 6-11). The substrate with the conductive pattern is capable of being used as an in-mold decoration decorated film, which satisfies the requirement of intended use as recited by the claim. Aufderheide is silent as to applying a first material to the substrate, applying a second material to the substrate, stripping the first material prior to applying a thin film. However, applying a first material to the substrate, applying a second material to the substrate, stripping the first material prior to addition coating is well known and conventional as show for example by MacDiarmid et al. MacDiarmid et al discloses a method of forming pattern. The method includes to applying a first material to the substrate (Page 7, paragraph 140), applying a second material to the substrate (Page 7, Paragraph 144), stripping the first material (Page 9, paragraphs 159-160), and applying addition pattern over the existing patterns (Page 9, Paragraph 155).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to applying a first material to the substrate, applying a second material to the substrate, stripping the first material prior to applying addition pattern to the substrate as disclosed by MacDiarmid et al in the method of Aufderheide to provide a method of patterning a functional material on a substrate, which does not dependent on the resolution of the lines of the pattern, nor require the directed application, e.g. printing, of the pattern of the functional material onto the substrate. (See MacDiarmid et al, Page 2, Paragraph 40)

Regarding claim 43, Aufderheide as modified above is silent as to first material repels the second material. However, patterning materials by repulsion is well known

Art Unit: 1734

and conventional as shown for example by MacDiarmid et al. MacDiarmid et al discloses the formation of the pattern by the first and second materials is by attraction and repulsion. (Page 8, Paragraph 150)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to patterning materials by repulsion as disclosed by MacDiarmid et al in the method of Aufderheide to provide a simple and inexpensive method of patterning a functional material on a substrate. (See MacDiarmid et al, Page 2, Paragraph 40)

Regarding claim 44, Aufderheide as modified above is silent as to the first solvent is an aqueous solution or water. However, using a solvent such as water to remove pattern is well known and conventional as shown for example by MacDiarmid et al. MacDiarmid et al discloses techniques for removing pattern depends on the composition of the material and includes any solvent such as water. (Page 9, paragraph 160)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to remove the pattern with any solvent such as water depending on the composition of the material as disclosed by MacDiarmid et al in the method of Aufderheide to provide a simple and inexpensive method of patterning a functional material on a substrate. (See MacDiarmid et al, Page 2, Paragraph 40)

15. Claims 46-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aufderheide (U.S. 4,714,631) in view of MacDiarmid et al (U.S. 2002/0083858) as applied to claim 42 above, and further in view of Imai et al (U.S. 6,140,025).

Aufderheide as modified above is silent as to removing the pattern with aqueous basic solution or aqueous acidic solution. However, providing resin as cover layer, which can be removed by aqueous solution of acid or base is well known and conventional as shown for example by Imai et al. Imai et al discloses a method of forming resist pattern. The method includes providing resin, which can be removed by solvent such as water, acidic, or basic aqueous solution to dissolve or disperse the resin. (Col 9, line 53 to Col 10, line 9) For one of ordinary skill in the art would appreciate to logically use resin for the first and second material in the method of MacDiarmid et al to remove the first material with a solvent such as water, acidic or basic solution without removing the second material and to remove the second material after application of the third material with either water, acidic or basic solution to remove the second material in the method of Aufderheide to form the conductive pattern on the substrate.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the pattern by removing the pattern with aqueous basic solution, aqueous acidic solution, or water by forming the first or second material to allow the first material to be removed without removing the second material using water, acidic or basic solution as disclosed by Imai et al and to logically selecting the resin, which is soluble in a different solvent than the first material in the method of Aufderheide as modified by MacDiarmid et al to a pattern that is excellent in safe operativity and efficiency. (See Imai et al, Col 2, lines 45-48)

Art Unit: 1734

16. Claims 50 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aufderheide (U.S. 4,714,631) in view of Brummett et al (U.S. 4,368,281).

Aufderheide discloses a method of forming patterned layers onto substrates. The method includes printing a pattern of strippable undercoating, with the undercoating comprising 5 to 80% by weight solid particulate material, onto a substrate (Col 4, lines 15-20 and Col 4, lines 37-40), depositing a metal layer onto the coated substrate (Col 4, lines 47-60), washing the coating and the metal layer adhering to the coating off with water (Col 4, lines 61-66) and forming a conductive pattern on the substrate (Col 5, lines 6-11). The substrate with the conductive pattern is capable of being used as an in-mold decoration decorated film, which satisfies the requirement of intended use as recited by the claim. Aufderheide is silent as to the pattern is applied to both surfaces of the substrate. However, applying pattern to one or both surfaces of the substrate is well known and conventional as shown for example by Brummett et al. Brummett et al discloses printing the pattern to one or both side of the substrate for forming pattern. (Col 5, lines 39-49)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide pattern on one or both surfaces of the substrate as disclosed by Brummett et al in the method of Aufderheide as either one or both surface are all equivalents.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sing P. Chan whose telephone number is 571-272-


Art Unit: 1734

1225. The examiner can normally be reached on Monday-Thursday 7:30AM-11:00AM and 12:00PM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher A. Fiorilla can be reached on 571-272-1187. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SPC


CHRIS FIORILLA
SUPERVISORY PATENT EXAMINER
Au 1734